

SAF-RC-207

Remedial Action of the 100-C-7 &

100-C-7:1 Waste Sites – In-Process

FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 11/5/12
 INITIAL/DATE

COMMENTS:

SDG J01611 SAF-RC-207

Rad only Chem only Rad & Chem

Complete Partial

Sample Location: 100-C-7:1 (Section A)

Analytical Data Package Prepared For
Washington Closure Hanford

Radiochemical Analysis By
TestAmerica

2800 G.W. Way, Richland Wa, 99354, (509)-375-3131.

Assigned Laboratory Code: TARL

Data Package Contains 39 Pages

Report No.: **53612**

Results in this report relate only to the sample(s) analyzed.

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
J01611	RC-207	J1R457	J2K010436-1	MW7HW1AC	9MW7HW10	2306089
		J1R458	J2K010436-2	MW7H11AC	9MW7H110	2306089
		J1R459	J2K010436-3	MW7H21AC	9MW7H210	2306089
		J1R4T6	J2J300412-1	MW6HM1AC	9MW6HM10	2304090
		J1R4T7	J2J300412-2	MW6JE1AC	9MW6JE10	2304090
		J1R4T8	J2J300412-3	MW6JF1AC	9MW6JF10	2304090
		J1R4T9	J2J300412-4	MW6JJ1AC	9MW6JJ10	2304090
		J1R4V0	J2J300412-5	MW6JK1AC	9MW6JK10	2304090



THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

TestAmerica Laboratories, Inc.

Washington Closure Hanford
2620 Fermi Avenue
Richland, WA 99354

November 5, 2012

Attention: Joan Kessner

SAF Number	:	RC-207
Date SDG Closed	:	November 2, 2012
Number of Samples	:	Eight (8)
Sample Type	:	Soil
SDG Number	:	J01611
Data Deliverable	:	Quick Turn Metals / Summary

CASE NARRATIVE

I. Introduction

Between October 30, 2012 and November 1, 2012, eight soil samples were received at TestAmerica for analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the Washington Closure Hanford (WCH) specific ID;

<u>WCH ID#</u>	<u>TARL ID#</u>	<u>MATRIX</u>	<u>DATE OF RECEIPT</u>
J1R4T6	MW6HM	SOIL	10/30/12
J1R4T7	MW6JE	SOIL	10/30/12
J1R4T8	MW6JF	SOIL	10/30/12
J1R4T9	MW6JJ	SOIL	10/30/12
J1R4V0	MW6JK	SOIL	10/30/12
J1R457	MW7HW	SOIL	11/01/12
J1R458	MW7H1	SOIL	11/01/12
J1R459	MW7H2	SOIL	11/01/12

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors. The requested analyses were:

ICP Metals

ICP Metals by method SW-846 6010A

Chemical Analysis

Hexavalent Chromium by EPA method 7196A

Washington Closure Hanford
November 5, 2012

IV. Quality Control

SDG J01611 includes a minimum of one Laboratory Control Samples (LCS), one method (reagent) blank, a duplicate sample, matrix spike sample and a matrix spike duplicate sample. Any exceptions have been noted in the "Comments" section.

Blanks and LCS are reported in mg/L units, other QC and sample results are reported in the same units.

V. Comments

ICP Metals

ICP Metals by method SW-846 6010A

Two batches were analyzed for the samples with the standard metal request list.

Batch 2304093:

The LCS, batch blank, samples, sample duplicate, MS, MSD, ICB, ICV, CCB and CCV results are within contractual limits.

Batch 2306093:

The LCS, batch blank, samples, sample duplicate, MS, MSD, ICB, ICV, CCB and CCV results are within contractual limits.

Chemical Analysis

Hexavalent Chromium by EPA method 7196A

Two batches were analyzed.

Batch 2304090:

The matrix spike recovered low at 63%. The post digestive matrix spike recovered at 85% and the insoluble matrix spike recovered at 95%. This implies a reducing capacity in the sample, but not enough to exhaust the more copious insoluble matrix spike. The sample and sample duplicate agreement is outside the acceptance limits. This maybe attributed to the inhomogeneity of the matrix. Except as noted; the LCS, batch blank, samples, sample duplicate (J1R4T6) and sample matrix spike (J1R4T6) results are within contractual requirements.

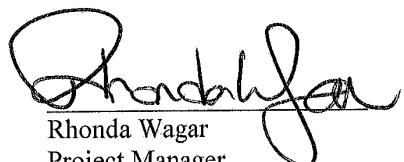
Batch 2306089:

The LCS, batch blank, samples, sample duplicate (J1R457) and sample matrix spike (J1R457) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Washington Closure Hanford
November 5, 2012

Reviewed and approved:



Rhonda Wagar
Project Manager

Drinking Water Method Cross References

DRINKING WATER ASTM METHOD CROSS REFERENCES		
Referenced Method	Isotope(s)	TestAmerica Richland's SOP No.
EPA 901.1	Cs-134, I-131	RL-GAM-001
EPA 900.0	Alpha & Beta	RL-GPC-001
EPA 00-02	Gross Alpha (Coprecipitation)	RL-GPC-002
EPA 903.0	Total Alpha Radium (Ra-226)	RL-RA-002
EPA 903.1	Ra-226	RL-RA-001
EPA 904.0	Ra-228	RL-RA-001
EPA 905.0	Sr-89/90	RL-GPC-003
ASTM D5174	Uranium	RL-KPA-003
EPA 906.0	Tritium	RL-LSC-005

Results in this report relate only to the sample(s) analyzed.

Uncertainty Estimation

TestAmerica Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, $R = \text{constants} * f(x,y,z,...)$. The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/\sqrt{n}), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or TestAmerica.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s) u_c - Combined Uncertainty.	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, u_c the <i>combined uncertainty</i> . The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or TestAmerica "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. $Lc = (1.645 * \sqrt{2 * (BkgndCnt/BkgndCntMin) / SCntMin}) * (\text{ConvFct} / (\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol}) * \text{IngrFct})$. For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. $MDC = (4.65 * \sqrt{(BkgndCnt/BkgndCntMin) / SCntMin} + 2.71 / SCntMin) * (\text{ConvFct} / (\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol}) * \text{IngrFct})$. For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the Work Order Number .
RER	The equation Replicate Error Ratio = $(S-D)/[\sqrt{(TPUs^2 + TPUs^2)}]$ as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUs is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by TestAmerica upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

Sample Results Summary

Date: 05-Nov-12

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 53612

SDG No: J01611

Batch	Client Id Work Order	Parameter	Result +/- Uncertainty (2s)	Qual	Units	Tracer Yield	MDL	CRDL	RPD
2304090 7196_CR6									
J1R4T6									
MW6HM1A	HEXCHROME	4.64E-01	+/- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
MW6HM1A	HEXCHROME	2.09E-01	+/- 0.0E+00		mg/kg	N/A	1.55E-01	3.50E-01	75.8
J1R4T7									
MW6JE1AC	HEXCHROME	1.55E-01	+/- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1R4T8									
MW6JF1AC	HEXCHROME	2.18E-01	+/- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
J1R4T9									
MW6JJ1AC	HEXCHROME	1.55E-01	+/- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1R4V0									
MW6JK1AC	HEXCHROME	1.55E-01	+/- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
2306089 7196_CR6									
J1R457									
MW7HW1A	HEXCHROME	2.00E-01	+/- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
MW7HW1A	HEXCHROME	2.41E-01	+/- 0.0E+00		mg/kg	N/A	1.55E-01	3.50E-01	18.6
J1R458									
MW7H11AC	HEXCHROME	3.40E-01	+/- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
J1R459									
MW7H21AC	HEXCHROME	1.97E-01	+/- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
No. of Results: 10									

TestAmerica

RPD - Relative Percent Difference.

rptSTLRchSaSum
mary2 V5.2.22
A2002

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

QC Results Summary
TestAmerica TARL
 Ordered by Method, Batch No, QC Type,.

Date: 05-Nov-12

Report No. : 53612

SDG No.: J01611

Batch Work Order	Parameter	Result +/- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDL
7196_CR6								
2304090	MATRIX SPIKE, J1R4T6 MW6HM1AL HEXCHROME	6.51E+00 +/- 0.0E+00		mg/kg	N/A	63%	-0.4	1.55E-01
2304090	LCS, MW6J21AC HEXCHROME	8.95E+00 +/- 0.0E+00		mg/kg	N/A	94%	-0.1	1.55E-01
2304090	BLANK QC, MW6J21AA HEXCHROME	1.55E-01 +/- 0.0E+00	U	mg/kg	N/A			1.55E-01
7196_CR6								
2306089	MATRIX SPIKE, J1R457 MW7HW1AL HEXCHROME	2.59E+01 +/- 0.0E+00		mg/kg	N/A	84%	-0.2	1.55E-01
2306089	LCS, MW7H41AC HEXCHROME	1.87E+01 +/- 0.0E+00		mg/kg	N/A	98%	0.0	1.55E-01
2306089	BLANK QC, MW7H41AA HEXCHROME	1.55E-01 +/- 0.0E+00	U	mg/kg	N/A			1.55E-01
No. of Results: 6								

TestAmerica Bias - (Result/Expected)-1 as defined by ANSI N13.30.
 rptSTLRchQcSum
 mary V5.2.22 U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or
 A2002 not identified by gamma scan software.

FORM I
SAMPLE RESULTS

Date: 05-Nov-12

Lab Name: TestAmerica
Lot-Sample No.: J2K010436-1
Client Sample ID: J1R457

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUncrt	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 2306089	7196_CR6				Work Order: MW7HW1AC		Report DB ID: SN/MW7HW10					
HEXCHROME	2.00E-01			0.0E+00	1.55E-01	mg/kg	N/A	(1.3)	11/1/12 04:00 p		2.5138	g

No. of Results: 1 Comments:

FORM I
SAMPLE RESULTS

Date: 05-Nov-12

Lab Name: TestAmerica
Lot-Sample No.: J2K010436-2
Client Sample ID: J1R458

Parameter	Result	Count	Total	MDL,	Rpt Unit,	Yield	Rst/MDL,	Analysis,	Total Sa	Aliquot	Primary
		Qual	Uncert(2 s)	Action Lev	Lc	CRDL(RL)	Rst/TotUncert	Prep Date	Size	Size	Detector
Batch: 2306089	7196_Cr6		Work Order: MW7H11AC	MW7H11AC		Report DB ID: MW7H110					
HEXCHROME	3.40E-01	0.0E+00		1.55E-01	mg/kg	N/A	(2.2)	11/11/12 04:00 p			
						1.55E-01	N/A				
No. of Results:	1	Comments:									

FORM I
SAMPLE RESULTS

Date: 05-Nov-12

Lab Name: TestAmerica
 Lot-Sample No.: J2K010436-3
 Client Sample ID: J1R459

Parameter	Result	Count	Total	MDL, Action_Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 2306089 HEXCHROME	7196_Cr6 1.97E-01	Work Order: MW7H21AC 0.0E+00	Total Uncert(2 s) 1.55E-01 mg/kg	MDL, Action_Lev N/A	Rpt Unit, Lc N/A	Yield CRDL(RL) (1.3)	Report DB ID: 9MW7H210 11/11/12 04:00 p	Analysis, Prep Date N/A	Total Sa Size 1.55E-01	Aliquot Size g	Primary Detector 2.504
No. of Results: 1 Comments:											

FORM I
SAMPLE RESULTS

Date: 05-Nov-12

Lab Name: TestAmerica
 Lot-Sample No.: J2J300412-1
 Client Sample ID: J1R4T6

SDG:	J01611	Collection Date:	10/30/2012 7:45:00 AM								
Report No.:	53612	Received Date:	10/30/2012 10:32:00 AM								
COC No.:	RC-207-097	Matrix:	SOIL								
Ordered by Client Sample ID, Batch No.											
Parameter	Result	Count Qual	Total Error (2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotlCert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 2304090 HEXCHROME	7196_Cr6 4.64E-01	Work Order: MW6HM1AC 0.0E+00	Uncert(2 s) 1.55E-01	mg/kg	Report DB ID: 9MW6HM10 N/A	(3.)	10/30/12 12:20 p 1.55E-01	N/A	2.5007 g		

No. of Results: 1 Comments:

FORM I
SAMPLE RESULTS

Date: 05-Nov-12

Lab Name: TestAmerica
 Lot-Sample No.: J2J300412-2
 Client Sample ID: J1R4T7

Parameter	Result	Count	Total	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/Tot/Ucert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 2304090 HEXCHROME	7196_Cr6 1.55E-01	U	0.0E+00	1.55E-01 mg/kg	Report DB ID: 9MW6GE10 N/A	1.	10/30/12 12:20 p N/A		2.5016 1.55E-01	g N/A	
No. of Results: 1 Comments:											

FORM I
SAMPLE RESULTS

Date: 05-Nov-12

Lab Name: TestAmerica
 Lot-Sample No.: J2J300412-3
 Client Sample ID: J1R4T8

Parameter	Result	Count	Total	MDL,	Rpt Unit,	Yield	Rst/MDL,	Analysis,	Total Sa	Aliquot	Primary
		Qual	Error (2 s)	Action Lev	Lc	CRDL(RL)	Rst/TotlCert	Prep Date	Size	Size	Detector
Batch: 2304090	7196_Cr6			Work Order: MW6/JF1AC			Report DB ID: 9MW6/JF10				
HEXCHROME	2.18E-01	0.0E+00	1.55E-01	mg/kg		N/A	(1.4)	10/30/12 12:20 p		2.5018	g

No. of Results: 1 Comments:

FORM I
SAMPLE RESULTS

Date: 05-Nov-12

Lab Name: TestAmerica
 Lot-Sample No.: J2J300412-4
 Client Sample ID: J1R4T9

Parameter	Result	Count	Total	MDL, Action Lev	Rpt Unit, Lc	Rst/MDL, CRDL(RL)	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 2304090	7196_Cr6		Work Order: MW6JJ1AC			Report DB ID: 9MW6JJ10				
HEXCHROME	1.55E-01	U	0.0E+00	1.55E-01 mg/kg	N/A	1.	10/30/12 12:20 p	2.5026	g	

No. of Results: 1 Comments:

FORM I
SAMPLE RESULTS

Date: 05-Nov-12

Lab Name: TestAmerica
 Lot-Sample No.: J2J300412-5
 Client Sample ID: J1R4V0

Parameter	Result	Count	Total	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 2304090 HEXCHROME	7196_CR6 1.55E-01	U	Work Order: MW6JK1AC 0.0E+00	1.55E-01 mg/kg	Report DB ID: 9MW6JK10 N/A	1.	N/A	10/30/12 12:20 p	1.55E-01 N/A	9	2.5012

No. of Results: 1 Comments:

FORM II

Date: 05-Nov-12

DUPLICATE RESULTS

Lab Name: TestAmerica
Lot-Sample No.: J2K010436-1
Client Sample ID: J1R457

Parameter	Result, Orig Rst	Count Qual	Total Error (2 s)	MDL, Action Lev	Rpt Unit, CRDL	Rst/MDL, Rst/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 2306089	7196_CRF6			Work Order: MW7HW1AM		Report DB ID: MW7HW1ER	Orig Sa DB ID: 9MW7HW10			
HEXCHROME	2.41E-01		0.0E+00	1.55E-01	mg/kg	N/A	(1.6)	11/12 04:00 p	2.5098	g
			RPD 18.6	3.50E-01		N/A				

No. of Results: 1 Comments:

FORM II**DUPLICATE RESULTS**

Lab Name: TestAmerica
Lot-Sample No.: J2J300412-1
Client Sample ID: J1R4T6

SDG: J01611**Collection Date:** 10/30/2012 7:45:00 AM**Report No. :** 53612**Received Date:** 10/30/2012 10:32:00 AM**COC No. :** RC-207-097**Matrix:** SOIL

Parameter	Result, Orig Rst	Count	Total	MDL,	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 2304090	7196_CRF6			Work Order: MW6HM1AM			Report DB ID: MW6HM1ER	Orig Sa DB ID: 9MW6HM10			
HEXCHROME	2.09E-01	0.0E+00	1.55E-01	mg/kg	N/A	(1.3)	10/30/12 12:20 p	2.5047			
	4.64E-01	4.64E-01	RPD 75.8		3.50E-01	N/A			g		

No. of Results: 1 **Comments:**

Date: 05-Nov-12

FORM II
BLANK RESULTS

Lab Name: TestAmerica
Matrix: SOIL

SDG: J01611
Report No. : 53612

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Lc	Rpt Unit, CRDL	Rst/MDL, Yield	Rst/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 2304090	7196_CR6				Work Order: MW6J21AA		Report DB ID: MW6J21AB					
HEXCHROME	1.55E-01	U		0.0E+00	1.55E-01	mg/kg	N/A	1.	10/30/12 12:20 p	2.5	g	
					1.55E-01		N/A					
Batch: 2306089	7196_CR6				Work Order: MW7H41AA		Report DB ID: MW7H41AB					
HEXCHROME	1.55E-01	U		0.0E+00	1.55E-01	mg/kg	N/A	1.	11/1/12 04:00 p	2.5	g	
					1.55E-01		N/A					

No. of Results: 2 Comments:

FORM II
LCS RESULTS

Date: 05-Nov-12

Lab Name: TestAmerica
 Matrix: SOIL

SDG: J01611
 Report No.: 53612

Parameter	Result	Count	Total	Report Unit	Yield	Expected	Recovery,	Analysis,	Aliquot Size	Primary Detector
		Error (2 s)	Uncert(2 s)	MDL		Uncert	Bias	Prep Date		
Batch: 2304090 HEXCHROME	7196_CRF6 8.95E+00		Work Order: MW6J21AC 0.0E+00	1.55E-01 mg/kg	Report DB ID: MW6J21AC N/A	9.50E+00	94%	10/30/12 12:20 p	2.5 g	
Batch: 2306089 HEXCHROME	7196_CRF6 1.87E+01		Work Order: MW7H41AC 0.0E+00	1.55E-01 mg/kg	Report DB ID: MW7H41AS N/A	1.90E+01	98%	11/1/12 04:00 p	2.5 g	
No. of Results: 2	Comments:			Rec Limits:	80	120	-0.1			

Date: 05-Nov-12

FORM II
MATRIX SPIKE RESULTS

Lab Name: TestAmerica
Lot-Sample No.: J2J300412-1, J1R4T6

SDG: J01611
Report No.: 53612

Parameter	SpikeResult, Orig Rst	Count	Total Uncert(2 s)	MDC MDA	Rpt Unit, CRDL	Yield	Rec- overy	Expected, Uncert	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2304090	Work Order: MW6HM1AL	Report DB ID: MW6HM1CW	0.0E+00	1.55E-01	Orig Sa DB ID: 9MW6HM10	N/A	63.22%	1.03E+01	10/30/12 12:20 p	2.5005	7196 CR6
HEXCHROME	6.51E+00										
	4.64E-01										

Number of Results: 1

Comments:

TestAmerica	RER	- Replicate Error Ratio = $(S-D)/[\sqrt{(sq(TPUS)+sq(TPUd))}]$ as defined by ICPT BOA.
rptSLRchMs V5.2.22 A2002	Bias	- (Result/Expected)-1 as defined by ANSI N13.30.

FORM II
MATRIX SPIKE RESULTS

Date: 05-Nov-12

Lab Name: TestAmerica
 Lot-Sample No.: J2K010436-1, J1R457

SDG: J01611
 Report No.: 53612

Parameter	SpikeResult, Orig Rst	Count Quai	Total Error (2 s)	Uncert(2 s)	MDCIMDA	Rpt Unit, CRDL	Yield	Rec- over	Expected, Uncert	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2306089	Work Order: MW7HW1AL				Report DB ID: MW7HW1CW	Orig Sa DB ID: 9MW7HW10						
HEXCHROME	2.59E+01		0.0E+00	1.55E-01	mg/kg	N/A	83.79%	3.09E+01	11/11/12 04:00 p	2.5/25	7196_CRG	
		2.00E-01									g	

Number of Results: 1

Comments:

TestAmerica RER - Replicate Error Ratio = $(S-D)/[\sqrt{sq(TPU_{Us})+sq(TPU_d)}]$ as defined by ICPT BOA.
 rptSTL RchMs Bias - (Result/Expected)-1 as defined by ANSI N13.30.
 V5.2.22 A2002

Client id	Result	Cas nbr	Parameter	Qualifier	Units	Reporting_Limits	Reporting_Units	Uncertainty_1s	Analyzed	Decision_Level	LCR	Recd/Analysis date	Time	Batch nbr	Test_Met	Lab_sample_id
JIR476	SOIL	CS	7440-22-4	Ag	UG/G	3.55E+00	3.55E+00	2.00E-01	0.2537 G	1.65E-01	2304093 46DQ	MW6HM1AO	10/30/2012 14:55	2304093 46DQ	MW6HM1AO	10/30/2012 14:55
JIR476	SOIL	CS	7440-38-2	U	UG/G	3.55E+00	3.55E+00	8.40E-01	0.2537 G	6.89E-01	2304093 46DQ	MW6HM1AO	10/30/2012 14:55	2304093 46DQ	MW6HM1AO	10/30/2012 14:55
JIR476	SOIL	CS	7440-39-3	Ba	U/G	2.76E-01	2.76E-01	5.60E-01	0.2537 G	4.58E-01	2304093 46DQ	MW6HM1AO	10/30/2012 14:55	2304093 46DQ	MW6HM1AO	10/30/2012 14:55
JIR476	SOIL	CS	7440-41-7	Beryllium	UG/G	8.87E-02	8.87E-02	1.30E-02	0.2537 G	1.02E-02	2304093 46DQ	MW6HM1AO	10/30/2012 14:55	2304093 46DQ	MW6HM1AO	10/30/2012 14:55
JIR476	SOIL	CS	7440-43-3	Cadmium	UG/G	1.02E+00	1.02E+00	2.30E-02	0.2537 G	2.03E-02	2304093 46DQ	MW6HM1AO	10/30/2012 14:55	2304093 46DQ	MW6HM1AO	10/30/2012 14:55
JIR476	SOIL	CS	7440-47-3	Chromium	UG/G	3.94E+00	3.94E+00	1.90E-01	0.2537 G	1.54E-01	2304093 46DQ	MW6HM1AO	10/30/2012 14:55	2304093 46DQ	MW6HM1AO	10/30/2012 14:55
JIR476	SOIL	CS	7439-32-1	Lead	UG/G	1.81E+00	1.81E+00	3.30E-01	0.2537 G	2.72E-01	2304093 46DQ	MW6HM1AO	10/30/2012 14:55	2304093 46DQ	MW6HM1AO	10/30/2012 14:55
JIR476	SOIL	CS	7782-49-2	Se	UG/G	3.26E+00	3.26E+00	4.40E-01	0.2537 G	3.60E-01	2304093 46DQ	MW6HM1AO	10/30/2012 14:55	2304093 46DQ	MW6HM1AO	10/30/2012 14:55
JIR476	SOIL	CS	7440-22-4	Chromium	UG/G	3.57E+00	3.57E+00	1.40E-01	0.2537 G	1.13E-01	2304093 46DQ	MW6HM1AA	10/30/2012 15:13	2304093 46DQ	MW6HM1AA	10/30/2012 15:13
JIR477	SOIL	CS	7440-38-2	As	UG/G	2.53E+00	2.53E+00	3.27E+00	0.2537 G	2.05E+00	2304093 46DQ	MW6JF1AA	10/30/2012 15:13	2304093 46DQ	MW6JF1AA	10/30/2012 15:13
JIR477	SOIL	CS	7440-39-3	Ba	U/G	7.31E-01	7.31E-01	2.78E-01	0.2537 G	1.60E-01	2304093 46DQ	MW6JF1AA	10/30/2012 15:13	2304093 46DQ	MW6JF1AA	10/30/2012 15:13
JIR477	SOIL	CS	7440-41-7	Beryllium	UG/G	3.72E-01	3.72E-01	6.34E-02	0.2537 G	2.40E-02	2304093 46DQ	MW6JF1AA	10/30/2012 15:13	2304093 46DQ	MW6JF1AA	10/30/2012 15:13
JIR477	SOIL	CS	7440-43-9	Cadmium	UG/G	1.03E+00	1.03E+00	1.60E+00	0.2537 G	6.30E+00	2304093 46DQ	MW6JF1AA	10/30/2012 15:13	2304093 46DQ	MW6JF1AA	10/30/2012 15:13
JIR477	SOIL	CS	7440-47-3	Chromium	UG/G	3.97E+00	3.97E+00	3.97E+00	0.2537 G	1.20E+00	2304093 46DQ	MW6JF1AA	10/30/2012 15:13	2304093 46DQ	MW6JF1AA	10/30/2012 15:13
JIR477	SOIL	CS	7439-92-1	Lead	UG/G	1.83E+00	1.83E+00	2.40E-01	0.2537 G	1.99E-01	2304093 46DQ	MW6JF1AA	10/30/2012 15:13	2304093 46DQ	MW6JF1AA	10/30/2012 15:13
JIR477	SOIL	CS	7782-49-2	Se	UG/G	2.75E+00	2.75E+00	3.57E+00	0.2537 G	2.05E+00	2304093 46DQ	MW6JF1AA	10/30/2012 15:13	2304093 46DQ	MW6JF1AA	10/30/2012 15:13
JIR478	SOIL	CS	7440-22-4	Ag	UG/G	9.15E-02	9.15E-02	3.61E+00	0.2433 G	1.30E-01	2304093 46DQ	MW6JF1AA	10/30/2012 15:17	2304093 46DQ	MW6JF1AA	10/30/2012 15:17
JIR478	SOIL	CS	7440-38-2	As	UG/G	1.77E+00	1.77E+00	3.61E+00	0.2433 G	7.60E-01	2304093 46DQ	MW6JF1AA	10/30/2012 15:17	2304093 46DQ	MW6JF1AA	10/30/2012 15:17
JIR478	SOIL	CS	7440-39-3	Ba	U/G	7.44E-01	7.44E-01	2.81E-01	0.2433 G	1.60E+00	2304093 46DQ	MW6JF1AA	10/30/2012 15:17	2304093 46DQ	MW6JF1AA	10/30/2012 15:17
JIR478	SOIL	CS	7440-41-7	Beryllium	UG/G	2.75E-01	2.75E-01	9.03E-02	0.2433 G	6.40E-03	2304093 46DQ	MW6JF1AA	10/30/2012 15:17	2304093 46DQ	MW6JF1AA	10/30/2012 15:17
JIR478	SOIL	CS	7440-43-9	Cadmium	UG/G	8.97E-04	8.97E-04	1.04E+00	0.2433 G	5.90E-02	2304093 46DQ	MW6JF1AA	10/30/2012 15:17	2304093 46DQ	MW6JF1AA	10/30/2012 15:17
JIR478	SOIL	CS	7440-47-3	Chromium	UG/G	5.38E+00	5.38E+00	4.01E+00	0.2433 G	4.01E+00	2304093 46DQ	MW6JF1AA	10/30/2012 15:17	2304093 46DQ	MW6JF1AA	10/30/2012 15:17
JIR478	SOIL	CS	7439-92-1	Lead	UG/G	3.98E+00	3.98E+00	1.85E+00	0.2433 G	1.30E-01	2304093 46DQ	MW6JF1AA	10/30/2012 15:17	2304093 46DQ	MW6JF1AA	10/30/2012 15:17
JIR478	SOIL	CS	7782-49-2	Se	UG/G	9.32E-02	9.32E-02	3.41E+00	0.2433 G	5.80E-01	2304093 46DQ	MW6JF1AA	10/30/2012 15:17	2304093 46DQ	MW6JF1AA	10/30/2012 15:17
JIR479	SOIL	CS	7439-92-1	Lead	UG/G	1.08E-01	1.08E-01	3.70E+00	0.2432 G	8.50E-02	2304093 46DQ	MW6JF1AA	10/30/2012 15:21	2304093 46DQ	MW6JF1AA	10/30/2012 15:21
JIR479	SOIL	CS	7440-22-4	As	UG/G	4.52E+00	4.52E+00	3.70E+00	0.2432 G	6.90E-01	2304093 46DQ	MW6JF1AA	10/30/2012 15:21	2304093 46DQ	MW6JF1AA	10/30/2012 15:21
JIR479	SOIL	CS	7440-38-2	Ba	UG/G	6.20E-01	6.20E-01	2.88E-01	0.2432 G	6.50E-01	2304093 46DQ	MW6JF1AA	10/30/2012 15:21	2304093 46DQ	MW6JF1AA	10/30/2012 15:21
JIR479	SOIL	CS	7440-41-7	Beryllium	UG/G	3.92E-01	3.92E-01	9.25E-02	0.2432 G	6.10E-02	2304093 46DQ	MW6JF1AA	10/30/2012 15:21	2304093 46DQ	MW6JF1AA	10/30/2012 15:21
JIR479	SOIL	CS	7440-43-9	Cadmium	UG/G	2.98E-02	2.98E-02	1.07E+00	0.2432 G	5.01E-02	2304093 46DQ	MW6JF1AA	10/30/2012 15:21	2304093 46DQ	MW6JF1AA	10/30/2012 15:21
JIR479	SOIL	CS	7440-47-3	Chromium	UG/G	9.66E-02	9.66E-02	1.89E+00	0.2432 G	4.10E-01	2304093 46DQ	MW6JF1AA	10/30/2012 15:21	2304093 46DQ	MW6JF1AA	10/30/2012 15:21
JIR479	SOIL	CS	7439-92-1	Lead	UG/G	8.35E-01	8.35E-01	1.89E+00	0.2432 G	2.51E-01	2304093 46DQ	MW6JF1AA	10/30/2012 15:21	2304093 46DQ	MW6JF1AA	10/30/2012 15:21
JIR479	SOIL	CS	7782-49-2	Se	UG/G	1.25E-01	1.25E-01	3.50E+00	0.2432 G	4.30E-01	2304093 46DQ	MW6JF1AA	10/30/2012 15:21	2304093 46DQ	MW6JF1AA	10/30/2012 15:21
JIR479	SOIL	CS	7440-22-4	As	UG/G	7.44E-02	7.44E-02	1.20E-01	0.2432 G	1.20E-01	2304093 46DQ	MW6JF1AA	10/30/2012 15:21	2304093 46DQ	MW6JF1AA	10/30/2012 15:21
JIR479	SOIL	CS	7440-38-2	Ba	UG/G	3.92E-01	3.92E-01	3.63E+00	0.2432 G	2.83E-01	2304093 46DQ	MW6JF1AA	10/30/2012 15:21	2304093 46DQ	MW6JF1AA	10/30/2012 15:21
JIR479	SOIL	CS	7440-41-7	Beryllium	UG/G	9.04E-01	9.04E-01	9.05E-02	0.2432 G	1.20E-01	2304093 46DQ	MW6JF1AA	10/30/2012 15:21	2304093 46DQ	MW6JF1AA	10/30/2012 15:21
JIR479	SOIL	CS	7440-43-9	Cadmium	UG/G	1.42E-01	1.42E-01	1.05E+00	0.2432 G	5.40E-02	2304093 46DQ	MW6JF1AA	10/30/2012 15:21	2304093 46DQ	MW6JF1AA	10/30/2012 15:21
JIR479	SOIL	CS	7440-47-3	Chromium	UG/G	3.77E-01	3.77E-01	4.04E+00	0.2432 G	2.50E-01	2304093 46DQ	MW6JF1AA	10/30/2012 15:21	2304093 46DQ	MW6JF1AA	10/30/2012 15:21
JIR479	SOIL	CS	7439-92-1	Lead	UG/G	7.47E-02	7.47E-02	7.47E-02	0.2432 G	5.05E-01	2304093 46DQ	MW6JF1AA	10/30/2012 15:21	2304093 46DQ	MW6JF1AA	10/30/2012 15:21
JIR479	SOIL	BLK	BLK	BLK	UG/G	9.98E-04	9.98E-04	3.83E-01	0.2476 G	2.74E-01	2304093 46DQ	MW6JF1AA	10/30/2012 15:37	2304093 46DQ	MW6JF1AA	10/30/2012 15:37
JIR479	SOIL	BLK	BLK	BLK	UG/G	3.90E-05	3.90E-05	1.80E-02	0.2476 G	2.08E-02	2304093 46DQ	MW6JF1AA	10/30/2012 15:37	2304093 46DQ	MW6JF1AA	10/30/2012 15:37
JIR479	SOIL	BLK	BLK	BLK	UG/G	9.87E-05	9.87E-05	1.40E-03	0.2476 G	1.90E-03	2304093 46DQ	MW6JF1AA	10/30/2012 15:37	2304093 46DQ	MW6JF1AA	10/30/2012 15:37
JIR479	SOIL	BLK	BLK	BLK	UG/G	9.23E-01	9.23E-01	4.50E-04	0.2476 G	4.50E-04	2304093 46DQ	MW6JF1AA	10/30/2012 15:37	2304093 46DQ	MW6JF1AA	10/30/2012 15:37
JIR479	SOIL	BLK	BLK	BLK	UG/G	7.67E-01	7.67E-01	5.20E-03	0.2476 G	5.20E-03	2304093 46DQ	MW6JF1AA	10/30/2012 15:37	2304093 46DQ	MW6JF1AA	10/30/2012 15:37
JIR479	SOIL	BLK	BLK	BLK	UG/G	7.07E-01	7.07E-01	2.00E-02	0.2476 G	1.20E-03	2304093 46DQ	MW6JF1AA	10/30/2012 15:37	2304093 46DQ	MW6JF1AA	10/30/2012 15:37
JIR479	SOIL	BLK	BLK	BLK	UG/G	3.76E-01	3.76E-01	1.20E-03	0.2476 G	1.20E-03	2304093 46DQ	MW6JF1AA	10/30/2012 15:37	2304093 46DQ	MW6JF1AA	10/30/2012 15:37
JIR479	SOIL	BLK	BLK	BLK	UG/G	3.76E-01	3.76E-01	1.20E-03	0.2476 G	1.20E-03	2304093 46DQ	MW6JF1AA	10/30/2012 15:37	2304093 46DQ	MW6JF1AA	10/30/2012 15:37
JIR479	SOIL	BLK	BLK	BLK	UG/G	3.76E-01	3.76E-01	1.20E-03	0.2476 G	1.20E-03	2304093 46DQ	MW6JF1AA	10/30/2012 15:37	2304093 46DQ	MW6JF1AA	10/30/2012 15:37
JIR479	SOIL	BLK	BLK	BLK	UG/G	3.76E-01	3.76E-01	1.20E-03	0.2476 G	1.20E-03	2304093 46DQ	MW6JF1AA	10/30/2012 15:37	2304093 46DQ	MW6JF1AA	10/30/2012 15:37
JIR479	SOIL	BLK	BLK	BLK	UG/G	3.76E-01	3.76E-01	1.20E-03	0.2476 G	1.20E-03	2304093 46DQ	MW6JF1AA	10/30/2012 15:37	2304093 46DQ	MW6JF1AA	10/30/2012 15:37
JIR479	SOIL	BLK	BLK	BLK	UG/G	3.76E-01	3.76E-01	1.20E-03	0.2476 G	1.20E-03	2304093 46DQ	MW6JF1AA	10/30/2012 15:37	2304093 46DQ	MW6JF1AA	10/30/2012 15:37
JIR479	SOIL	BLK	BLK	BLK	UG/G	3.76E-01	3.76E-01	1.20E-03	0.2476 G	1.20E-03	2304093 46DQ</td					

Client_id	Result	Cas_nbr	Parameter	Qualifier	Units	Reporting_Limits	Reporting_Limits	Uncertainty_1s	Analyzed	AnalzyzDecision_Level_LC	LCSTreeAdded/Analysis_date/time	Batch_nbr	Test_MettLab_sample_Id
J1R4T6	MS	7440-43-9	Cadmium	% REC	1.73E+02	1.03E+00	1.20E-01	9.83E-02	0.88	197.8	10/30/2012 14:59	MW6HMIA0	
J1R4T6	MS	7440-47-3	Chromium	% REC	1.76E+02	3.96E+00	0.2528 L	1.31E+00	0.89	197.8	10/30/2012 14:59	MW6HMIA0	
J1R4T6	MS	7439-32-1	Lead	% REC	1.73E+02	1.82E+00	4.10E-01	0.2528 L	0.87	197.8	10/30/2012 14:59	MW6HMIA0	
J1R4T6	MSD	7782-49-2	Se	% REC	1.66E+02	3.36E+00	1.00E+00	0.2528 L	0.84	197.8	10/30/2012 14:59	MW6HMIA0	
J1R4T6	MSD	7440-22-4	Ag	% REC	1.70E+02	3.54E+00	1.50E+00	0.2545 L	0.86	196.5	10/30/2012 15:03	MW6HMIA0	
J1R4T6	MSD	7440-38-2	As	% REC	1.76E+02	3.54E+00	2.60E+00	0.2545 L	0.88	196.5	10/30/2012 15:03	MW6HMIA0	
J1R4T6	MSD	7440-39-3	Ba	% REC	1.86E+02	2.75E+01	0.2545 L	0.94	196.5	10/30/2012 15:03	MW6HMIA0		
J1R4T6	MSD	7440-41-7	Beryllium	% REC	1.71E+02	8.84E-02	2.00E+00	0.2545 L	0.87	196.5	10/30/2012 15:03	MW6HMIA0	
J1R4T6	MSD	7440-43-9	Cadmium	% REC	1.69E+02	1.02E+00	1.02E+00	0.2545 L	0.86	196.5	10/30/2012 15:03	MW6HMIA0	
J1R4T6	MSD	7440-47-3	Chromium	% REC	1.74E+02	3.93E+00	2.40E+00	0.2545 L	0.89	196.5	10/30/2012 15:03	MW6HMIA0	
J1R4T6	MSD	7439-32-1	Lead	% REC	1.68E+02	1.81E+00	0.2545 L	0.93E+01	0.85	196.5	10/30/2012 15:03	MW6HMIA0	
J1R4T6	MSD	7782-49-2	Se	% REC	1.61E+02	3.34E+00	1.40E+00	0.2545 L	0.82	196.5	10/30/2012 15:03	MW6HMIA0	

Client_id	Matrix	Result_Cas_nbr	Parameter	Result	Qualifier	Units	Reporting_Limits	Reporting_Units	Limits	Uncertainty_1s	Analyzed	Decision_Level	LC����	LC����	Added/Analysis date	Time	Batch_nbr	Test_MetLab_sample_id	
J1R457	SOIL_CS	7440-22-4	Ag	5.71E-02	U	UG/G	3.55E-00	3.55E-00	1.20E-01	0.2532 G	5.30E-01	1.02E-01	MW7H1M1A0	11/11/2012 20:10	2306093 46DQ	MW7H1M1A0	11/11/2012 20:10	2306093 46DQ	MW7H1M1A0
J1R457	SOIL_CS	7440-38-2	As	2.61E+00	U	UG/G	3.35E+00	3.35E+00	6.50E-01	0.2532 G	1.59E-01	5.34E-01	MW7H1M1A0	11/11/2012 20:10	2306093 46DQ	MW7H1M1A0	11/11/2012 20:10	2306093 46DQ	MW7H1M1A0
J1R457	SOIL_CS	7440-39-3	Ba	5.04E+01	U	UG/G	2.70E+00	2.70E+00	1.90E+00	0.2532 G	1.78E-01	5.30E-01	MW7H1M1A0	11/11/2012 20:10	2306093 46DQ	MW7H1M1A0	11/11/2012 20:10	2306093 46DQ	MW7H1M1A0
J1R457	SOIL_CS	7440-41-7	Beryllium	2.92E-01	U	UG/G	8.80E-02	8.80E-02	6.70E-02	0.2532 G	2.19E-02	5.06E-02	MW7H1M1A0	11/11/2012 20:10	2306093 46DQ	MW7H1M1A0	11/11/2012 20:10	2306093 46DQ	MW7H1M1A0
J1R457	SOIL_CS	7440-43-9	Cadmium	4.59E-01	U	UG/G	1.03E+00	1.03E+00	6.10E-02	0.2532 G	1.90E-01	5.06E-02	MW7H1M1A0	11/11/2012 20:10	2306093 46DQ	MW7H1M1A0	11/11/2012 20:10	2306093 46DQ	MW7H1M1A0
J1R457	SOIL_CS	7440-47-3	Chromium	4.39E-01	U	UG/G	3.95E+00	3.95E+00	1.30E+00	0.2532 G	1.82E-01	5.06E-02	MW7H1M1A0	11/11/2012 20:10	2306093 46DQ	MW7H1M1A0	11/11/2012 20:10	2306093 46DQ	MW7H1M1A0
J1R457	SOIL_CS	7439-92-1	Lead	3.98E+00	U	UG/G	1.82E+00	1.82E+00	1.82E+00	0.2532 G	1.83E+00	4.05E-01	MW7H1M1A0	11/11/2012 20:10	2306093 46DQ	MW7H1M1A0	11/11/2012 20:10	2306093 46DQ	MW7H1M1A0
J1R457	SOIL_CS	7432-49-2	Se	1.62E+00	U	UG/G	3.64E+00	3.64E+00	2.00E+01	0.2474 G	1.62E-01	4.05E-01	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R458	SOIL_CS	7440-38-2	As	1.50E+00	U	UG/G	3.64E+00	3.64E+00	2.10E+01	0.2474 G	1.70E-01	4.05E-01	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R458	SOIL_CS	7440-39-3	Ba	5.75E-01	U	UG/G	2.83E+00	2.83E+00	9.11E-02	0.2474 G	1.76E+00	4.05E-01	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R458	SOIL_CS	7440-41-7	Beryllium	2.48E-01	U	UG/G	9.11E-02	9.11E-02	9.60E-03	0.2474 G	1.76E+00	4.05E-01	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R458	SOIL_CS	7440-43-9	Cadmium	4.93E-02	U	UG/G	1.05E+00	1.05E+00	5.40E+02	0.2474 G	1.82E+00	4.05E-01	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R458	SOIL_CS	7440-47-3	Chromium	3.55E+00	U	UG/G	4.05E+00	4.05E+00	3.36E+00	0.2474 G	1.83E+00	4.05E-01	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R458	SOIL_CS	7439-92-1	Lead	2.18E+00	U	UG/G	3.64E+00	3.64E+00	2.18E+01	0.2474 G	1.83E+00	4.05E-01	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R458	SOIL_CS	7432-49-2	Se	1.74E+00	U	UG/G	3.55E+00	3.55E+00	2.00E+01	0.2474 G	1.83E+00	4.05E-01	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7440-22-4	Ag	1.84E+00	U	UG/G	3.55E+00	3.55E+00	1.90E+01	0.2474 G	1.83E+00	4.05E-01	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7440-38-2	As	1.69E+00	U	UG/G	3.55E+00	3.55E+00	1.80E+02	0.2474 G	1.83E+00	4.05E-01	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7440-39-3	Ba	4.75E+01	U	UG/G	2.76E+01	2.76E+01	1.90E+01	0.2474 G	1.83E+00	4.05E-01	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7440-41-7	Beryllium	2.40E+01	U	UG/G	8.80E+00	8.80E+00	8.80E+02	0.2474 G	1.83E+00	4.05E-01	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7440-43-9	Cadmium	1.98E+01	U	UG/G	1.03E+00	1.03E+00	1.03E+00	0.2474 G	1.83E+00	4.05E-01	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7439-92-1	Lead	2.17E+00	U	UG/G	3.55E+00	3.55E+00	1.82E+01	0.2474 G	1.83E+00	4.05E-01	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7432-49-2	Se	1.52E+00	U	UG/G	3.55E+00	3.55E+00	1.80E+02	0.2474 G	1.83E+00	4.05E-01	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7440-22-4	Ag	2.29E+04	U	UG/G	9.20E+03	9.20E+03	9.20E+03	0.2474 G	1.83E+00	4.05E-01	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7440-38-2	As	2.29E+04	U	UG/G	1.80E+02	1.80E+02	1.80E+02	0.2474 G	1.83E+00	4.05E-01	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7440-41-7	Beryllium	1.42E+05	U	MG/L	4.50E+04	4.50E+04	4.50E+04	0.2461 L	1.40E+03	5.45E+02	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7440-43-9	Cadmium	1.01E+04	U	MG/L	3.98E+00	3.98E+00	3.98E+00	0.2461 L	1.40E+04	5.45E+02	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7440-47-3	Chromium	3.35E+04	U	MG/L	5.20E+03	5.20E+03	5.20E+03	0.2461 L	1.40E+04	5.45E+02	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7440-49-2	Lead	9.78E+04	U	MG/L	9.20E+03	9.20E+03	9.20E+03	0.2461 L	1.40E+04	5.45E+02	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7440-52-1	Mercury	6.42E+04	U	MG/L	1.70E+02	1.70E+02	1.70E+02	0.2461 L	1.40E+04	5.45E+02	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7440-52-1	Mercury	6.42E+04	U	MG/L	1.70E+02	1.70E+02	1.70E+02	0.2461 L	1.40E+04	5.45E+02	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7440-52-1	Mercury	6.42E+04	U	MG/L	1.70E+02	1.70E+02	1.70E+02	0.2461 L	1.40E+04	5.45E+02	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7440-52-1	Mercury	6.42E+04	U	MG/L	1.70E+02	1.70E+02	1.70E+02	0.2461 L	1.40E+04	5.45E+02	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7440-52-1	Mercury	6.42E+04	U	MG/L	1.70E+02	1.70E+02	1.70E+02	0.2461 L	1.40E+04	5.45E+02	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7440-52-1	Mercury	6.42E+04	U	MG/L	1.70E+02	1.70E+02	1.70E+02	0.2461 L	1.40E+04	5.45E+02	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7440-52-1	Mercury	6.42E+04	U	MG/L	1.70E+02	1.70E+02	1.70E+02	0.2461 L	1.40E+04	5.45E+02	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7440-52-1	Mercury	6.42E+04	U	MG/L	1.70E+02	1.70E+02	1.70E+02	0.2461 L	1.40E+04	5.45E+02	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7440-52-1	Mercury	6.42E+04	U	MG/L	1.70E+02	1.70E+02	1.70E+02	0.2461 L	1.40E+04	5.45E+02	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7440-52-1	Mercury	6.42E+04	U	MG/L	1.70E+02	1.70E+02	1.70E+02	0.2461 L	1.40E+04	5.45E+02	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7440-52-1	Mercury	6.42E+04	U	MG/L	1.70E+02	1.70E+02	1.70E+02	0.2461 L	1.40E+04	5.45E+02	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7440-52-1	Mercury	6.42E+04	U	MG/L	1.70E+02	1.70E+02	1.70E+02	0.2461 L	1.40E+04	5.45E+02	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7440-52-1	Mercury	6.42E+04	U	MG/L	1.70E+02	1.70E+02	1.70E+02	0.2461 L	1.40E+04	5.45E+02	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0	11/11/2012 20:43	2306093 46DQ	MW7H1M1A0
J1R459	SOIL_CS	7440-52-1	Mercury	6.42E+04	U	MG/L	1.70E+02	1.70E+02	1										

Richland Laboratory
Data Review Check List
Hexavalent Chromium

Batch Number(s):	2304090	Lab Sample Numbers or SDG:	J01611	
Method/Test/Parameter: Cr+6 <input type="checkbox"/> RL-WC-003(Aqueous) <input checked="" type="checkbox"/> RL-WC-004(Solid)				
Review Item	Yes (✓)	No (✗)	N/A (✗)	2 nd Level Review (✓)
A. Initial Calibration				
1. Performed at required frequency with required number of levels?	✓			✗
2. Correlation coefficient greater than 0.97?	✓			✗
3. Initial calibration verification (ICV) analyzed immediately after calibration and results within 10% of expected?	✓			✗
4. Initial calibration blank (ICB) analyzed immediately after ICV and concentrations of all parameters ≤ reporting limit?	✓			✗
B. Continuing Calibration				
1. CCV analyzed at required frequency and all parameters within 10% of expected?	✓			✗
2. CCB analyzed at required frequency and all results ≤ reporting limit?	✓			✗
C. Sample Analysis				
1. Were any samples with concentrations above the linear range diluted and reanalyzed?		✓		✗
2. Were all sample holding times met?	✓			✗
D. QC Samples				
1. All results for the preparation blank below limits?	✓			✗
2. LCS percent recovery within 85-115%	✓			✗
3. PbCrO ₄ percent recovery within 75-125%?	✓			✗
4. Sample and Duplicate within 20% (aqueous) or 35% (solid) RPD?	✓			✗
5. MS or MS/MSD recoveries within 85-115% (aqueous) or 75-125% (solid)?		✓		✗
6. On MS failure, PDMS within 85-115%?	✓			✗
E. Other				
1. Are all nonconformances included and noted?	✓			✗
2. Is the correct date and time of analysis shown?	✓			✗
3. Did the analyst sign and date the front page of the analytical run?	✓			✗
4. Correct methodology used?	✓			✗
5. Transcriptions checked?	✓			✗
6. Calculations checked at minimum frequency?	✓			✗
7. Units checked?	✓			✗

Comments on any "No" response or list NCM number: 10-22167

Analyst: *Beth Ogle*
CG-231 Rev 1 5/10

Date 10/31/12 2nd Review

Date 10/31/12

Clouseau Nonconformance Memo



NCM #: **10-22189**
NCM Initiated By: Traci KROUPA
Date Opened: 11/05/2012
Date Closed:

Classification: **Deficiency**
Status: **PMREVIEW**
Production Area: Classical Chemistry
Tests: 7196A
Lot #'s (Sample #'s): J2J300000 (90), J2J300412 (1,2,3,4,5),
QC Batches: 2304090,

Nonconformance: Batch Result Out of Limits
Subcategory: MS/MSD result outside acceptance limits

Problem Description / Root Cause

Name	Date	Description
Traci KROUPA	11/05/2012	The MS recovered below the acceptable limit, likely due to matrix effect.

Corrective Action

Name	Date	Corrective Action
Traci KROUPA	11/05/2012	A PDMS was performed and recovered within limits. The matrix effect enough to reduce the MS, and not enough to reduce the more copious PbCO4.

Client Notification Summary

Client	Project Manager	Notified	Response	How Notified	Note
	Response	Response Note			

Quality Assurance Verification

Verified By	Due Date	Status	Notes
This section not yet completed by QA.			

Approval History

Date Approved	Approved By	Position
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Richland Laboratory
Data Review Check List
Hexavalent Chromium

Batch Number(s):	2306089	Lab Sample Numbers or SDG:	J01611	
Method/Test/Parameter: Cr+6 <input type="checkbox"/> RL-WC-003(Aqueous) <input checked="" type="checkbox"/> RL-WC-004(Solid)				
Review Item	Yes (✓)	No (✓)	N/A (✓)	2 nd Level Review (✓)
A. Initial Calibration				
1. Performed at required frequency with required number of levels?	✓			/
2. Correlation coefficient greater than 0.97?	✓			/
3. Initial calibration verification (ICV) analyzed immediately after calibration and results within 10% of expected?	✓			/
4. Initial calibration blank (ICB) analyzed immediately after ICV and concentrations of all parameters ≤ reporting limit?	✓			/
B. Continuing Calibration				
1. CCV analyzed at required frequency and all parameters within 10% of expected?	✓			/
2. CCB analyzed at required frequency and all results ≤ reporting limit?	✓			/
C. Sample Analysis				
1. Were any samples with concentrations above the linear range diluted and reanalyzed?		✓		/
2. Were all sample holding times met?	✓			/
D. QC Samples				
1. All results for the preparation blank below limits?	✓			/
2. LCS percent recovery within 85-115%	✓			/
3. PbCrO ₄ percent recovery within 75-125%?	✓			/
4. Sample and Duplicate within 20% (aqueous) or 35% (solid) RPD?	✓			/
5. MS or MS/MSD recoveries within 85-115% (aqueous) or 75-125% (solid)?	✓			/
6. On MS failure, PDMS within 85-115%?			✓	/
E. Other				
1. Are all nonconformances included and noted?		✓		/
2. Is the correct date and time of analysis shown?	✓			/
3. Did the analyst sign and date the front page of the analytical run?	✓			/
4. Correct methodology used?	✓			/
5. Transcriptions checked?	✓			/
6. Calculations checked at minimum frequency?	✓			/
7. Units checked?	✓			/

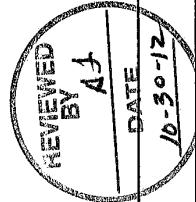
Comments on any "No" response or list NCM number:

Analyst 
CG-231 Rev 1 5/12

Date 11/2/12 2nd Review

 Date 11/2/12

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-207-097		Page 1 of 1	
Collector R. Brackett	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code <i>8510</i>	10/23/12	Data Turnaround <i>21 Days</i>			
Project Designation Remedial Action of the 100-C-7 & 100-C-7:1 Waste Sites - 1	Sampling Location 100-C-7:1(Section C)	SAF No. RC-207							
Ice Chest No. N/A	Field Logbook No. EL-1655-06	COA R00C712600	Method of Shipment Hand deliver						
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A	Bill of Lading/Air Bill No. N/A							
POSSIBLE SAMPLE HAZARDS/REMARKS <i>None</i>									
Special Handling and/or Storage Cool 4 degrees centigrade <i>SDS# J01611</i> <i>JUT# JJJ300412</i> J2J300412 <i>Report: 10-31-12</i> SAMPLE ANALYSIS									
Sample No.	Matrix *	Sample Date <i>10/30/12</i>	Sample Time <i>0745</i>	Preservation <i>G/P</i>	Cool AC <i>G/P</i>				
J1R4T6 <i>MJL6TM</i>	SOIL	<i>10/30/12</i>	<i>0755</i>	<i>X</i>	<i>X</i>				
J1R4T7 <i>MJL6TE</i>	SOIL	<i>10/30/12</i>	<i>0755</i>	<i>X</i>	<i>X</i>				
J1R4T8 <i>MJL6TF</i>	SOIL	<i>10/30/12</i>	<i>0810</i>	<i>X</i>	<i>X</i>				
J1R4T9 <i>MJL6TJ</i>	SOIL	<i>10/30/12</i>	<i>0820</i>	<i>X</i>	<i>X</i>				
J1R4V0 <i>MJL6TK</i>	SOIL	<i>10/30/12</i>	<i>0830</i>	<i>X</i>	<i>X</i>				
SPECIAL INSTRUCTIONS									
Relinquished By/Removed From <i>REBORN</i> Date/Time <i>10-30-12 0840</i> Received By/Stored In <i>REBORN</i> Date/Time <i>10-30-12 0840</i>									
Relinquished By/Removed From <i>R. Fahlberg</i> Date/Time <i>10-30-12 0930</i> Received By/Stored In <i>REBORN</i> Date/Time <i>10-30-12 0930</i>									
Relinquished By/Removed From <i>REBORN</i> Date/Time <i>10-30-12 1030</i> Received By/Stored In <i>REBORN</i> Date/Time <i>10-30-12 1030</i>									
Relinquished By/Removed From Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In									
LABORATORY SECTION	Received By Disposal Method					DATE <i>10-30-12</i>	Date/Time		
FINAL SAMPLE DISPOSITION							Date/Time		



Matrix *
S=Soil
SE=Sediment
SO=Solid
SH=Sludge
W=Water
O=Oil
A=Air
DS=Drain Solids
DL=Drain Liquids
T=Tissue
WT=Wipe
L=Liquid
V=Vegetation
X=Other

(1) Metals by ICP - 6010 - Quick Turn {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Metals by ICP - 6010 - Quick Turn (Add On) {Beryllium};

Sample Check-in List

Date/Time Received: 10-30-12 @ 1032 Container GM Screen Result: (Airlock) 04 Initials [bv]
 Sample GM Screen Result (Sample Receiving) 03 Initials [bv]

Client: LCH SDG #: J01611 NA [] SAF #: RC-207 NA []

Lot Number: RC-J2J30A412

Chain of Custody # RC-207-097

Shipping Container ID: Hand Delivery NA [bv] Air Bill Number: _____ NA [bv]

Samples received inside shipping container/cooler/box Yes [bv] Continue with 1 through 4. Initial appropriate response.

No [] Go to 5, add comment to #16.

- | | | | |
|--|--|---------|-------------------------------|
| 1. Custody Seals on shipping container intact? | Yes [] | No [] | No Custody Seal [<u>bv</u>] |
| 2. Custody Seals dated and signed? | Yes [] | No [] | No Custody Seal [<u>bv</u>] |
| 3. Cooler temperature: | <u>16.1</u> °C <u>on ice</u>
<u>Packs</u> | NA [] | NA [] |
| 4. Vermiculite/packing materials is | NA [] | Wet [] | Dry [<u>bv</u>] |

Item 5 through 16 for samples. Initial appropriate response.

- | | | |
|---|-------------------|--------|
| 5. Chain of Custody record present? | Yes [<u>bv</u>] | No [] |
| 6. Number of samples received (Each sample may contain multiple bottles): | <u>5</u> | |
| 7. Containers received: | <u>10X125mlp</u> | |

- | | | | |
|-----------------------------------|--|-------------|---|
| 8. Sample holding times exceeded? | NA [] | Yes [] | No [<u>bv</u>] |
| 9. Samples have: | <u>bv</u> hazard labels
<u>bv</u> custody seals | | |
| 10. Matrix: | <u>bv</u> A (FLT, Wipe, Solid, Soil)
<u>bv</u> S (Air, Niosh 7400) | I (Water) | T (Biological, Ni-63) |
| 11. Samples: | <u>bv</u> are in good condition
<u>bv</u> are broken
<u>bv</u> Other | are leaking | have air bubbles (Only for samples requiring no head space) |

- | | |
|--|---------------------------------|
| 12. Sample pH appropriate for analysis requested
(If acidification is necessary, then document sample ID, initial pH, amount of HNO ₃ added and pH after addition on table overleaf) | Yes [] No [] NA [<u>bv</u>] |
| RPL ID # of preservative used : | _____ |
| 13. Were any anomalies identified in sample receipt? | Yes [] No [<u>bv</u>] |
| 14. Description of anomalies (include sample numbers): NA [<u>bv</u>] | _____ |

15. Sample Location, Sample Collector Listed on COC? * Yes [✓] No []
*For documentation only. No corrective action needed.

16. Additional Information: _____

Client/Courier denied temperature check.

[2] Client/Courier unpack cooler.

Sample Custodian: LWyz Date: 10-30-12

Client Informed on _____ by _____ Person contacted _____

No action necessary. process as is
Project Manager: Ronald Weller Date: 10/30/18

A graph showing titration curves for two samples. The x-axis is labeled "ACID AMOUNT" and the y-axis is labeled "pH". A vertical line at approximately 10 mL is labeled "TITRATION".

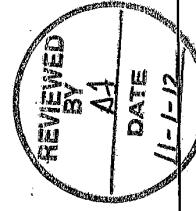
The graph shows two titration curves:

- The first curve starts at a pH of approximately 10 and increases linearly as acid is added.
- The second curve starts at a pH of approximately 4 and increases linearly as acid is added, showing a more pronounced change in slope (steeper) after the titration point (10 mL).

J2J 3004b ♀w 10/30/12

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			RC-207-095	Page 1 of 2
Collector R. Brackett	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Coat <i>8L</i>	<i>84 hrs</i>	Data Turnaround <i>11. 11-12 Days</i>
Project Designation Remedial Action of the 100-C-7 & 100-C-7.1 Waste Sites - 1	Sampling Location 100-C-7.1(Section A)		SAF No. RC-207		<i>24 hrs</i>	
Ice Chest No. N/A	Field Logbook No. EL-1655-06	COA R00C712600	Method of Shipment Hand deliver			
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A			Bill of Lading/Air Bill No. N/A		
POSSIBLE SAMPLE HAZARDS/REMARKS						
None						
Special Handling and/or Storage Cool 4 degrees centigrade						
 J2K010436 SOIL <i>11-2-12</i>						
Sample No.	Matrix *	Sample Date	Sample Time	SPECIAL INSTRUCTIONS		
J1R454	SOIL	<i>RF</i>		Matrix * S=Soil SE=Soil sediment SO=Soil SJ=Sludge W=Water O=Oil A=Air DS=Dust Solids DL=Dust Liquids T=Issue W=Wipe L=Liquid V=Vessel X=Other		
J1R455	SOIL	<i>11-1-2012</i>				
J1R456	SOIL	<i>11-1-12</i>	<i>0815</i>	<i>X</i>	<i>X</i>	
J1R457	SOIL	<i>11-1-12</i>	<i>0820</i>	<i>X</i>	<i>K</i>	
J1R458	SOIL	<i>11-1-12</i>	<i>0820</i>	<i>X</i>	<i>K</i>	
CHAIN OF POSSESSION						
Relinquished By/Removed From <i>Bob Branson 10/22</i>	Date/Time Of/To <i>11-1-12</i>	Received By/Stored In <i>R.Fahllers R.Peele</i>	Date/Time <i>11-1-12</i>	(1) Metals by ICP - 6010 - Quick Turn {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Metals by ICP - 6010 - Quick Turn {Add On} {Beryllium}		
Relinquished By/Removed From <i>R.Fahllers R.Peele</i>	Date/Time Of/To <i>11-1-12</i>	Received By/Stored In <i>John</i>	Date/Time <i>11-1-12</i>			
Relinquished By/Removed From <i>R.Fahllers R.Peele</i>	Date/Time Of/To <i>11-1-12</i>	Received By/Stored In <i>John</i>	Date/Time <i>11-1-12</i>			
Relinquished By/Removed From <i>R.Fahllers R.Peele</i>	Date/Time Of/To <i>11-1-12</i>	Received By/Stored In <i>John</i>	Date/Time <i>11-1-12</i>			
Relinquished By/Removed From <i>R.Fahllers R.Peele</i>	Date/Time Of/To <i>11-1-12</i>	Received By/Stored In <i>John</i>	Date/Time <i>11-1-12</i>			
LABORATORY SECTION	Received By Date/Time	Received By/Stored In Date/Time	Received By/Stored In Date/Time	Disposed By Date/Time		
FINAL SAMPLE DISPOSITION	Disposal Method					

WCH-EE-011



Date/Time

Disposed By

Date/Time

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-207-095		Page 2 of 2	
Collector R. Brackett	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code <i>SL101712</i>	SAF No. RC-207	Data Turnaround <i>24 hrs</i>			
Project Designation Remedial Action of the 100-C-7 & 100-C-7:1 Waste Sites - I	Sampling Location 100-C-7:1 (Section A)	Field Logbook No. EL-1655-06	COA R00C712600	Method of Shipment Hand deliver					
Ice Chest No. N/A	Offsite Property No. N/A	Bill of Lading/Air Bill No. N/A							
POSSIBLE SAMPLE HAZARDS/REMARKS <i>None</i>		Preservation Cool +C	Cool 4C						
Special Handling and/or Storage <i>Cool 4 degrees centigrade</i>		Type of Container G/P	G/P						
		No. of Container(s) 1	1						
		Volume 125mL	125mL						
		See item (1) in Special Instructions.							
<i>SAKONOS</i> <i>Donnell</i> <i>Die 11-2-12</i>		SAMPLE ANALYSIS							
Sample No. <i>MJ10H3</i>	Matrix * SOIL	Sample Date <i>11-1-12</i>	Sample Time <i>0830</i>	X	X				
CHAIN OF POSSESSION									
Relinquished By/Removed From <i>TestAmerica</i>	Date/Time <i>11-1-12</i>	Received By/Stored In <i>R. Kessner R. Fadale</i>	Date/Time <i>11-1-12</i>	SPECIAL INSTRUCTIONS					
Relinquished By/Removed From <i>R. Fadale</i>	Date/Time <i>11-1-12</i>	Received By/Stored In <i>R. Kessner R. Fadale</i>	Date/Time <i>11-1-12</i>	(1) Metals by ICP - 6010 - Quick Turn {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Metals by ICP - 6010 - Quick Turn (Add On) {Beryllium}					
Relinquished By/Removed From <i>TestAmerica</i>	Date/Time <i>11-1-12</i>	Received By/Stored In <i>S. Salkin</i>	Date/Time <i>11-1-12</i>						
Relinquished By/Removed From <i>S. Salkin</i>	Date/Time <i>11-1-12</i>	Received By/Stored In <i>S. Salkin</i>	Date/Time <i>11-1-12</i>						
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time						
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time						
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time						
LABORATORY SECTION	Received By								
FINAL SAMPLE DISPOSITION	Disposal Method								

Sample Check-in List

Date/Time Received: 11-1-12 / 1320 Container GM Screen Result: (Airlock) .06 Initials B
 Sample GM Screen Result (Sample Receiving) -06 Initials B

Client: WCA SDG #: 301411 NA [] SAF #: RC-201 NA []

Lot Number: SAK010436

Chain of Custody # DC-207-095

Shipping Container ID: hand delivered NA [] Air Bill Number: _____ NA []

Samples received inside shipping container/cooler/box Yes B Continue with 1 through 4. Initial appropriate response.

No [] Go to 5, add comment to #16.

1. Custody Seals on shipping container intact? Yes [] No [] No Custody Seal N []
2. Custody Seals dated and signed? Yes [] No [] No Custody Seal B []
3. Cooler temperature: 5.56 °C ON THERM []
4. Vermiculite/packing materials is NA B [] Wet [] Dry []

Item 5 through 16 for samples. Initial appropriate response.

5. Chain of Custody record present? Yes B [] No []
6. Number of samples received (Each sample may contain multiple bottles): 3
7. Containers received: box 125 ml

8. Sample holding times exceeded? NA [] Yes [] No B []
9. Samples have:
B tape hazard labels
B custody seals appropriate sample labels
10. Matrix:
B A (FLT, Wipe, Solid, Soil) I (Water)
B S (Air, Niosh 7400) T (Biological, Ni-63)
11. Samples:
B are in good condition _____ are leaking
B are broken _____ have air bubbles (Only for samples requiring no head space)
B Other _____
12. Sample pH appropriate for analysis requested Yes [] No [] NA B []
 (If acidification is necessary, then document sample ID, initial pH, amount of HNO₃ added and pH after addition on table overleaf)
13. RPL ID # of preservative used : _____
14. Were any anomalies identified in sample receipt? Yes [] No B []
15. Description of anomalies (include sample numbers): NA B _____

15. Sample Location, Sample Collector Listed on COC? *
*For documentation only. No corrective action needed.

Yes No

16. Additional Information:

[] Client/Courier denied temperature check.

 Client/Courier unpack cooler.

Sample Custodian:

Date: 11-1-12

Client Informed on _____ by _____ Person contacted _____

No action necessary; process as is

Berson contacted

Project Manager _____ Date 11/12

LS-023, Rev. 15, 07/11

See over for additional information.

Sample Preparation/Analysis										Balance Id:
										Pipet #:
										Sep1 DT/Tm Tech:
										Sep2 DT/Tm Tech:
Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Ppt or Geometry	Count Time Min	Detector Id	CR Analyst, Init/Date
Comments:	Prep Tech:	Prep Tech:	Prep Tech:	Prep Tech:	Prep Tech:	Prep Tech:	Prep Tech:	Prep Tech:	Prep Tech:	Comments:
1 MW6HM-1-AC										
J21300412-1-SAMP										
10/30/2012 07:45										
2 MW6HM-1-ALS										
J21300412-1-MS										
10/30/2012 07:45										
3 MW6HM-1-AM-X										
J21300412-1-DUP										
10/30/2012 07:45										
4 MW6JE-1-AC										
J21300412-2-SAMP										
10/30/2012 07:55										
5 MW6JF-1-AC										
J21300412-3-SAMP										
10/30/2012 08:10										
6 MW6JU-1-AC										
J21300412-4-SAMP										
10/30/2012 08:20										
7 MW6JK-1-AC										
J21300412-5-SAMP										
10/30/2012 08:30										
TestAmerica Richland Wa.	Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added	ISV - Insufficient Volume for Analysis	WO Cnt: 7	Page 1	ICOC v4.8.49					

Sample Preparation/Analysis										Balance Id:
										Pipet #:
										Sep1 DT/Tm Tech:
										Sep2 DT/Tm Tech:
Work Ord. Lot.	Total Amt/Unit	Total Acidified/Unit	Initial Aliq Amt (Un-Acidified)	Adj Aliq Amt (Un-Acidified)	GC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count On Off (24hr) Circle	CR Analyst, Init/Date
Sample Date	Amt/Unit	Acidified/Unit	Amt/Unit	Amt/Unit						Comments:
8 MW6J21-AA-B	J24300000-90-BLK									Prep Tech:
	10/30/2012 12:32 pd									
9 MW6J21-AC-C	J24300000-90-LCS									
	10/30/2012 12:32 pd									
Comments:										
All Clients for Batch: 127642, Washington Closure Hanford LLC										Washington Closure Hanford LLC, RW2, 88144
MW6HMLAC-SAMP Constituent List:										
MW6HMLAC-MS Constituent List:										
MW6J21AA-BLK:										
MW6J21AC-LCS:										
MW6HMLAC-Calc Info: Uncert Level (#s) : 2 Decay to Sadt: Y Blk Subt.: N Sci.Not.: Y ODRs: B										
MW6HML-MS Calc Info: Uncert Level (#s) : 2 Decay to Sadt: Y Blk Subt.: N Sci.Not.: Y ODRs: B										
MW6J21AA-BLK: Uncert Level (#s) : 2 Decay to Sadt: Y Blk Subt.: N Sci.Not.: Y ODRs: B										
MW6J21AC-LCS: Uncert Level (#s) : 2 Decay to Sadt: Y Blk Subt.: N Sci.Not.: Y ODRs: B										
TestAmerica Richland Wa.	Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added	ISV - Insufficient Volume for Analysis								WO Cnt: 9
										ICOC v4.8.49

11/1/2012 3:47:12 PM

Sample Preparation/Analysis

127642, Washington Closure Hanford LLC
Washington Closure Hanford LLC
51 CLIENT: HANFORD
AnalyDueDate: 11/02/2012

Balance Id:

Pipet #:

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech:

PM, Quote: RW2, 88144**Barcode:****SEQ Batch, Test: None All Tests:****46DQ, 2306089 DWEA,****mg/kg****Barcode:****Work Ord, Lot, Sample Date****Total Amv/Unit****Initial Aliquot Amv/Unit****Adj Aliq Amt (Un-Acidified)****QC Tracer Prep Date****Ppt or Geometry****Dish Size****Tracer Yield****Count Time Min****Detector Id****Count On Off (24hr) Circle****CR Analyst, InitDate****Comments:****1 MW7HW-1-AC****J2K010436-1-SAMP****11/01/2012 08:15****AmRec: 2X125MLP****#Containers: 2****2 MW7HW-1-AL-S****J2K010436-1-MS****11/01/2012 08:15****AmRec: 2X125MLP****#Containers: 2****3 MW7HW-1-AM-X****J2K010436-1-DUP****11/01/2012 08:15****AmRec: 2X125MLP****#Containers: 2****4 MW7H1-1-AC****J2K010436-2-SAMP****11/01/2012 08:20****AmRec: 2X125MLP****#Containers: 2****5 MW7H2-1-AC****J2K010436-3-SAMP****11/01/2012 08:20****AmRec: 2X125MLP****#Containers: 2****6 MW7H4-1-AA-B****J2K010000-89-BLK****11/01/2012 15:47 pd****AmRec:****#Containers: 1****7 MW7H4-1-AC-C****J2K010000-89-LCS****11/01/2012 15:47 pd****AmRec:****#Containers: 1**

Sample Preparation/Analysis		Balance Id:										
DW Alkaline Digestion by method 3060A EA Chromium, Hexavalent (7196A)		Pipet #:										
51 CLIENT: HANFORD		Sep1 DT/Tm Tech:										
Batch: 2306089 mg/kg		Sep2 DT/Tm Tech:										
AnalyDueDate: 11/02/2012	SEQ Batch, Test: None	Prep Tech:										
Work Ord. Lot, Sample Date	Total Amt/Unit	Initial Aliquot Amt (Un-Acidified) / Amt/Unit	Adj Aliq Amt (Un-Acidified) / Amt/Unit	GC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On (24hr) Circle	CR Analyst, Init/Date	Comments:
Comments:												
All Clients for Batch: 127642, Washington Closure Hanford LLC		Washington Closure Hanford LLC, RW2, 88144										
MW7HWLAC-SAMP Constituent List:												
MW7HWLAL-MS Constituent List:												
MW7H41AA-BLK:												
MW7H41AC-LCS:												
MW7HWLAC-SAMP Calc Info:												
Uncert Level (#s):: 2 Decay to Sadt: Y Blk Subt.: N Sci.Not.: Y ODRS: B												
MW7HWLAL-MS Calc Info:												
Uncert Level (#s):: 2 Decay to Sadt: Y Blk Subt.: N Sci.Not.: Y ODRS: B												
MW7H41AA-BLK:												
Uncert Level (#s):: 2 Decay to Sadt: Y Blk Subt.: N Sci.Not.: Y ODRS: B												
MW7H41AC-LCS:												
Uncert Level (#s):: 2 Decay to Sadt: Y Blk Subt.: N Sci.Not.: Y ODRS: B												